

### **REMARKS**

Claims 1-10, 12-29, and 32-33 were presented for examination in the present application. The instant amendment adds claim 50 to point out various aspects of the present application. Thus, claims 1-10, 12-29, 32-33, and 50 are pending for consideration upon entry of the instant amendment. Claims 20, 22-24, 27, and 33 have been withdrawn, but remain pending for rejoinder upon allowance of a generic claim. Claims 1 and 50 are independent.

#### **Specification**

The Office Action objected to the specification. Specifically, the Office Action asserts that the disclosure fails to recite any equations at page 17, lines 12-14.

The specification has been amended to obviate this objection. Specifically, the specification has been amended to include the formula:

$$\left. \frac{dE_{\text{tot}}}{dT} \right|_{T=T_{\text{eff}}} = 0 = \left. \frac{dE_N}{dT} \right|_{T=T_{\text{eff}}} + \left. \frac{dE_V}{dT} \right|_{T=T_{\text{eff}}}$$

Support for this amendment can be found at least in claim 2 as filed, as well as in the German priority document at paragraph [0081]. No new matter is added. Accordingly, reconsideration and withdrawal of the objection to the specification are respectfully requested.

#### **Rejections under §112**

Claims 2-4, 16, and 25-27 were rejected under 35 U.S.C. §112, second paragraph.

Claims 2-4 and 16 have been amended to obviate these rejections. Claims 25-26 have been amended to depend from claim 1. Applicants submit that these

amendments obviate the rejections to claims 2-4, 16, and 25-26. Accordingly, reconsideration and withdrawal of the rejections to the claims are respectfully requested.

Rejection under §103

Independent claim 1, as well as dependent claims 2-8, 10, 12-14, 17-19, 29, and 32, were rejected under 35 U.S.C. §103(a) over U.S. Publication No. 2002/0162358 to Jeanvoine et al. (Jeanvoine). Dependent claims 9, 15, and 21 were rejected 35 U.S.C. §103(a) over Jeanvoine in view of U.S. Publication No. 2002/0112507 to Natterman et al. (Natterman). Dependent claim 28 was rejected 35 U.S.C. §103(a) over Jeanvoine in view of U.S. Publication No. 2002/0023463 to Siebers et al. (Siebers).

The Office Action asserts that the canal 1, chamber 2, and roof 3 of Jeanvoine would be naturally cooled. Applicants respectfully disagree.

Nonetheless and merely in the interest of expediting prosecution, independent claim 1 has been clarified to positively recite, in part, the step of requires "introducing the inorganic materials into a **melting unit with cooled walls, the melting unit being a skull crucible** (emphasis added)".

Jeanvoine, even if it were to be considered naturally cooled as asserted by the Office Action, fails to disclose or suggest a introducing the inorganic materials into a **melting unit with cooled walls, where the melting unit is a "skull crucible"**.

In such skull crucibles, the cooled walls are cooled so that a skin of solidified glass forms on the walls. In order to form the skin, the cooled walls must dissipate more heat than would be possible with the "natural cooling" asserted by the Office Action as being disclosed by Jeanvoine.

Claim 1 further recites, in part, the step of "selecting a temperature  $T_{\text{eff}}$  at which an **energy consumption per unit weight of the inorganic materials is at a minimum** (emphasis added)".

The Office Action asserts that Jeanvoine also teaches reducing energy cost, hence energy consumption, by melting at lower temperatures.

However, that is definitely not what is defined in claim 1. If the energy consumption per unit of batch melt is determined for a melting unit with cooled walls, the temperature  $T_{\text{eff}}$  where the energy consumption is minimal, is quite high. In a crucible with cooled walls, this temperature  $T_{\text{eff}}$  cannot be reached by lowering the temperature using the natural cooling asserted as being taught by Jeanvoine.

The Office Action fails to assert that the remaining cited art, namely Natterman and/or Siebers, alone or in combination cures the aforementioned or other defects of Jeanvoine.

Therefore, claim 1, as well as claims 2-10, 12-19, 21, 28-29, and 32 that depend therefrom, are not disclosed or suggested by the cited art. Reconsideration and withdrawal of the rejections to claims 2-10, 12-19, 21, 28-29, and 32 are respectfully requested.

Applicants respectfully request rejoinder of withdrawn claims 20, 22-24, 27, and 33, which depend from allowable claim 1 discussed above.

#### New claim 50

Claim 50 have been added to point out various aspects of the present application. It is submitted that claim 50 is directed to the elected embodiments. Support for new claim 50 can be found in the specification at least at page 3, lines 1-4.

No new matter is added.

Applicants specifically point out that new claim 50 is not intended to be limited to the specific mechanisms of patentability previously argued with respect to any prior claims in this or any related applications. Accordingly, Applicants hereby rescind any disclaimer of claim scope and, thus, any prior art for which such a disclaimer was made to avoid may need to be revisited by the Examiner with respect to claim 50.

It is believed that claim 50 is in condition for allowance. For example, claim 50 recites, in part, the step of "cooling the cooled walls to produce a skull layer of the melt on the cooled walls". Applicants submit that the cited art fails to disclose or suggest cooling the walls to produce a skull layer of the melt as claimed.

#### Summary

In view of the above, it is respectfully submitted that the present application is in condition for allowance. Such action is solicited.

If for any reason the Examiner feels that consultation with Applicants' attorney would be helpful in the advancement of the prosecution, the Examiner is invited to call the telephone number below.

Respectfully submitted,

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